

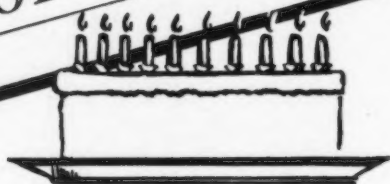
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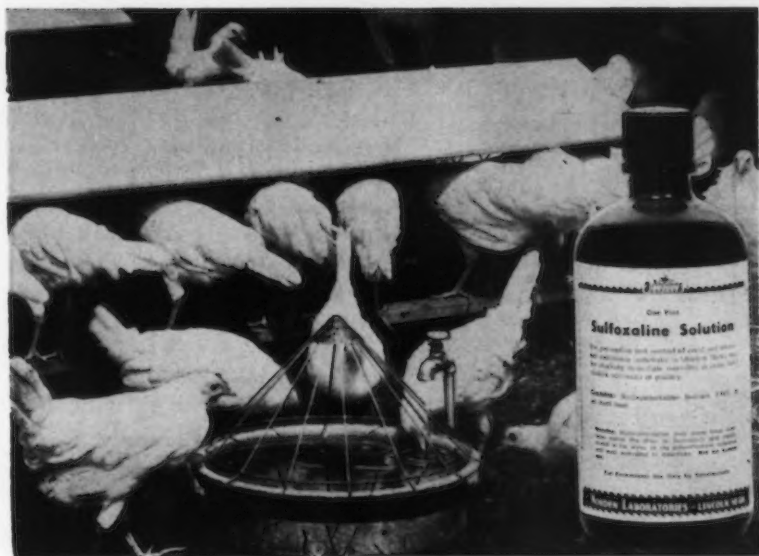
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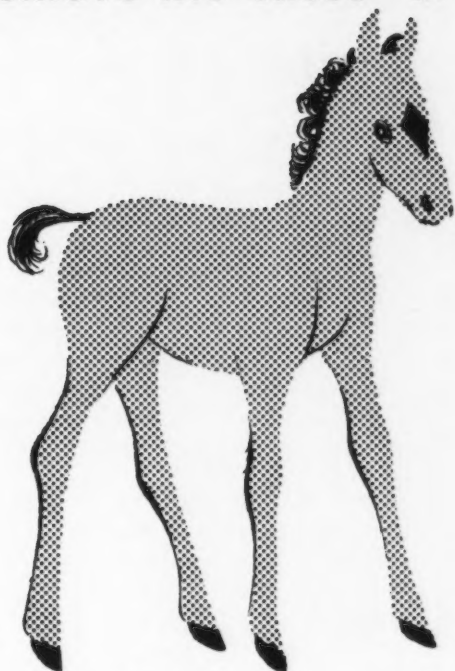
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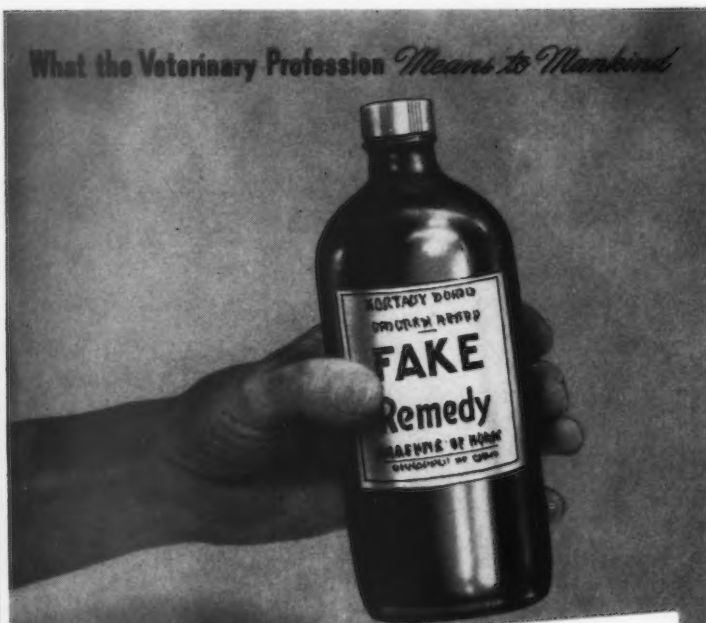


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What the Veterinary Profession Means to Mankind



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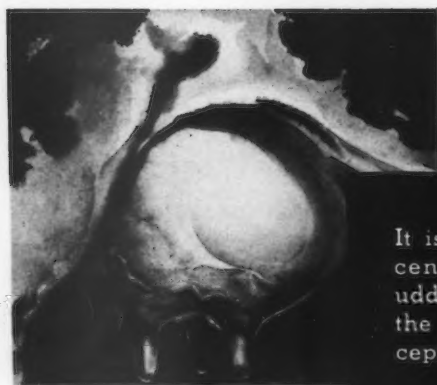
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1. Foley, E. J.; Stultz, A. W.; Lee, S. W., and Byrne, J. V.:  
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# THE CALIFORNIA VETERINARIAN

JULY-AUGUST, 1949

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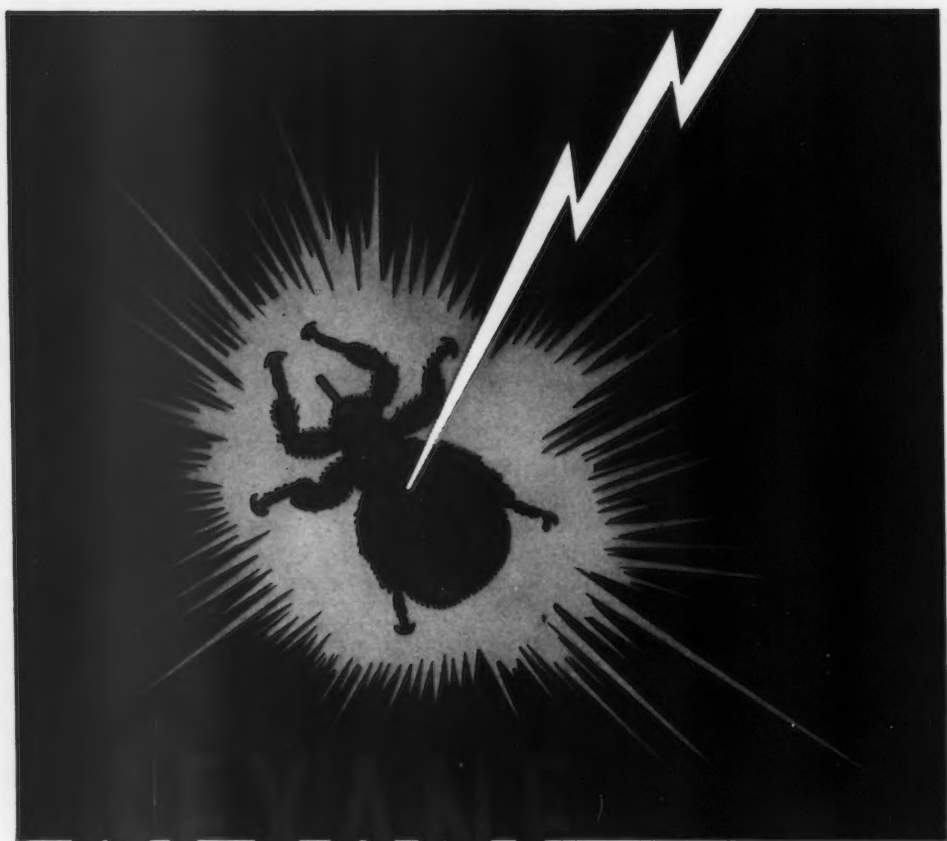
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## President's Message



F. P. WILCOX, D.V.M.

The California State Veterinary Medical Association has just recently concluded another successful convention and I am sure that all members who were able to participate were well repaid for their time and effort expended in the literary and social side of the meeting.

We were reminded that this was our 61st annual meeting and the interesting exhibit of our History Committee indicates that our Association has a proud heritage over all these years of its existence. It was founded by men of vision who realized the necessity of organization to work in the interest of the advancement of the profession in this state. Many of our members have been or are enshrined in the veterinary "Hall of Fame."

Originally founded on a solid foundation, it has been necessary through the years to enlarge the super-structure of the Association to keep pace with the rapid advances which are being made.

For many recent years careful study had been made for increasing the effectiveness of the Association in enhancing its prestige and esteem through sound public relations and other means to all groups and individuals throughout the state.

Less than three years ago, the Association put into operation its expanded program establishing a permanent office and employing an executive secretary. While some other Associations were thinking along similar lines, we were the first state to adopt such an expanded program.

Under this new program the establishment of our magazine has been possible and has given us a valuable medium for the dissemination of news items, scientific articles and much publicity of interest and value to every member and to other interested groups and individuals not only within the State, but to national and international groups as well.

Progress in any field requires thinking, planning and action. Each member of this Association should consider himself a committee of one to render competent and conscientious veterinary service in whatever field in which he is engaged. It should be every member's duty to talk Association membership to his non-member colleague and to get him interested in Association activities.

If called upon by officers of State or local Associations, he should devote all necessary efforts to carry out all assignments that may be given to him.

Increased membership will increase the Association's revenue and create more strength in the organization to advance the profession as a whole and to better resist any encroachments on the rights and privileges of veterinarians whenever and wherever they might occur.

I appreciate the confidence placed in me and will endeavor to do in a humble way all that I can for the best interests and welfare of the Association.

## THE ARMY VETERINARY CORPS

By JAMES A. McCALLAM, *Brigadier General, Veterinary Corps, United States Army*

Experience has shown that an individual does not lose all interest in military affairs upon separation from active duty. My contact with veterinarians who had service during World War I or II, many of whom I was meeting for the first time, has demonstrated their solicitude as citizens in the activities of the military establishment, and their questions have indicated more than a passing interest in matters pertaining to and affecting the Veterinary Corps. Therefore, an effort will be made in this article to present briefly information regarding the Army Veterinary Service, with particular emphasis on events since the cessation of hostilities in 1945.



BRIG. GEN. JAMES A. McCALLAM

The mission of the Veterinary Corps has not changed since it was created as an integral part of the Medical Department, United States Army by an Act of Congress, June 3, 1916. Changing conditions in the nation reflected in the operation of the Armed Forces have resulted in a re-evaluation of the importance of the Army Veterinary Service. As World War I amply demonstrated the value of an organized Army Veterinary Service, so World War II revealed that its importance and value to the military service had increased because expansion of the scope and activities of the veterinary profession in public health has been recognized and, paradoxical as it may seem, because of new weapons employed or capable of being used in modern warfare. It is our sincere belief that in any future war the role of the veterinary profession will be greater than ever. The importance of an organized veterinary service—civilian and military—to the national welfare and security of the United States cannot be exaggerated or overemphasized. Considering

all the modern weapons which could be utilized in prosecuting a war and their possible effect on the nation's food supply, I wonder how many citizens have taken the time to think of the economic shock that would be sustained by the livestock, poultry, and meat packing industries and the processors and manufacturers, and the effect on our way of living, should the flow of livestock and poultry to markets be stopped or appreciably diminished. Do many persons realize the contributions, direct and indirect, to human welfare and the economy of the nation which are made possible by the investigations of veterinarians engaged in animal disease research? It may be said the mission of military veterinary medicine is a phase of the general mission of organized veterinary medicine in carrying out its responsibilities in advancing the national security and public welfare.

No attempt will be made to present a detailed account of the organization and operation of the Army Veterinary Service. In an article of this nature it would be rather difficult to consider the many ramifications incident to the overall Army organization and command responsibility. Moreover, veterinarians with prior service are familiar with its basic organization and operation.

Although certain changes have been effected in the Army Veterinary Service since 1946, its basic organization and operation, the soundness of which was demonstrated during World War II, remain unchanged. Service is provided where required, within the limit of personnel available, in the United States and in overseas theaters to accomplish the principal tasks of veterinary food inspection, professional service for military animals, and advisory and supervisory veterinary service to military governments in occupied countries. With reference to the latter, particularly outstanding work has been and is being accomplished in reorganizing and reestablishing veterinary medicine in Japan, including that phase involving veterinary food inspection. A number of veterinarians from the United States are on duty in a civilian status with military government in Japan.

### Personnel

Maintaining an adequate number of veterinary officers on duty to meet requirements has been one of the problems confronting the Veterinary Division, Surgeon General's Office, since shortly after the cessation of hostilities. The number of Veterinary Corps Reserve officers and those with temporary commissions in the Army of the United States on active duty on September 1, 1945 was approximately 2,000. The rate of release was such that there was no real shortage of Reserve officers to



meet requirements until March 1946. Since then, the Veterinary Corps has operated under strength continuously because of inability to interest sufficient veterinarians in applying for initial appointment in the Veterinary Corps Reserve and active duty or former officers in applying for recall on a voluntary basis.

The difference between the number of officers authorized the Veterinary Corps, Regular Army, and the total number of veterinary officers necessary for the Corps to provide veterinary service must be met by the utilization of Veteran Corps Reserve officers who volunteer for active duty. The fact that there are insufficient veterinary Reserve officers on active duty makes it extremely difficult to provide an adequate service, including training, research, attendance as students at civilian institutions, and other special activities. The Officer Personnel Act of 1947, which requires that a veterinarian with less than one year experience must enter the service as a second lieutenant, has no doubt acted as a deterrent to the veterinarian who might volunteer for active duty immediately following graduation. Likewise, the ardor of the veterinary officer is further hampered by the knowledge that Medical and Dental Corps officers draw \$100.00 additional pay each month.

Because of the increased pre-professional college requirement, effective beginning with the 1949-50 academic year for students entering schools of veterinary medicine, a request will be made in the near future for legislation that will give three years' constructive service credit to veterinary officers, thus providing for initial appointment in the grade of first lieutenant.

Conversely, maintaining the Veterinary Corps of the Regular Army at its currently authorized strength of 186 officers has not been a problem. This was because of the authorization for integration into the Regular Army of a limited number of officers with World War II service, under the provision of Public Laws 281 and 670, 79th Congress. Appointments in the Veterinary Corps under Public Law 281 totaled 82 in 1946, and 36 in 1947 under Public Law 670.

Four veterinary reserve officers on active duty were tendered appointments as first lieutenants in the Veterinary Corps, Regular Army, in May 1949, following qualification under the Competitive Tour policy. This policy prescribes that a veterinarian to be eligible for appointment in the Veterinary Corps, Regular Army, must demonstrate his fitness by serving a Competitive Tour of continuous active duty for one year and be recommended for appointment by the commanding officer under whom the duty was performed. The candidate must be on active duty as a Veterinary Corps Reserve officer at the time of

entering upon the Competitive Tour and not have reached his thirty-second birthday when beginning the Competitive Tour. Regulations require that a candidate must have two years to serve at the time the Competitive Tour commences.

Each applicant at time of appointment in the Veterinary Corps, Regular Army, must be a male citizen of the United States, and must have reached his twenty-first birthday, but not his thirty-second birthday, except that those applicants who have passed their thirty-second birthday may be appointed if the number of years, months, and days elapsed after their thirty-second birthday does not exceed five and is less than or equal to the number of years, months, and days of active Federal commissioned service performed in the Army of the United States or any component thereof after December 31, 1947. The applicant must be a graduate of a school of veterinary medicine approved by the Surgeon General of the Army.

In general, it is true that appointment in the Regular Army is in the grade of second lieutenant. However, in the Medical Department, constructive service credit is given on the basis of the additional years required to qualify for a degree in medicine, dentistry, and veterinary medicine. An officer appointed in the Veterinary Corps, Regular Army, receives two years' constructive service. However, as all commissioned Federal active service in the Army subsequent to December 1947 is credited, the veterinary officer would be at least a first lieutenant when entering the Regular Army following his Competitive Tour for qualification.

The veterinary officer is eligible for and promoted to the permanent grades of captain, major, and lieutenant colonel at the end of 5, 12, and 19 years of actual active service, respectively. He may be promoted into each of the grades after a lesser amount of service when vacancies exist, if found qualified. The veterinary officer, like officers of all other arms and services, is eligible for selection and promotion to the grade of colonel after serving one year in the grade of lieutenant colonel. However, promotion into this grade is contingent upon a vacancy existing in the grade.

### Training

The veterinary officer must be prepared not only for his current military duties, but he must receive training for future assignments and increased responsibilities. Thus, his training must be progressive and continuing.

Training and career planning for veterinary personnel parallels that of other services. Officers and enlisted men will receive the same basic and tactical training as other Medical Department personnel. In addition, they will continue to receive technical training at the Medical Department Meat and Dairy Hy-

giene School and at the Army Medical Centers. Selected officers will continue to attend colleges and institutions for training in public health, virology, bacteriology, animal comparative pathology, and other specialties. Others will receive training at colleges and in civilian industry to specialize in meats and meat products, poultry and poultry products, fish and fishery products, and dairy products with relation to food inspection.

Since the assignment of veterinary officers to fill positions of responsibility in the higher staff and administrative echelons is required, provision exists for such training in the Advance Branch Course, the Command and Staff College, etc.

#### **Other Activities and Developments**

A post-war development has been changing the status of the Meat and Dairy Hygiene Course to that of a school. The course of instruction for officers has been increased to three months. The length of the course for enlisted men is two months. The methods of instruction employed include lectures, conferences, demonstrations, applicatory exercises, and the use of training films. An important feature of instruction is the utilization of the services of visiting lecturers—specialists in a subject—from civil life. The instruction received in the officers' course is of value not only while a veterinarian is in the Army but will prove valuable to those desiring to continue along this line of veterinary public health work in civil life on a full-time or part-time basis. This course of instruction is available to officers of the Veterinary Corps Reserve, and several have taken advantage of the opportunity. Application to attend should be made to the Senior Instructor or the Officer in Charge of Organized Reserve activities in your area.

Experience in World War II demonstrated the need for improvement in existing equipment used in Army veterinary food inspection work and for developing new equipment. Accordingly in 1946 a Research and Development Section was activated in the Veterinary Unit, located at Chicago Quartermaster Depot. A number of inspection cases have been assembled, and items of new equipment developed. These are sent to inspection units for trial and testing under field conditions to determine suitability prior to standardization as an item of issue.

The Veterinary Division of the Army Medical Department Research and Graduate School will continue as the primary Army diagnostic and food analyses laboratory and a center for training veterinary personnel for laboratory service. It likewise will continue as the center for veterinary research on animal diseases, particularly those diseases which may affect human health or military operations.

One development of interest to the veteri-

nary profession was the authorization for the activation of six veterinary ROTC units. Pursuant to this authorization, a veterinary unit was activated in July 1948 at each of the following institutions: Colorado State College, Cornell University, Iowa State College, Kansas State College, Ohio State University, and the University of Pennsylvania.

The individual completing the veterinary ROTC course has not only been trained as a prospective officer for either the Regular Army or the Reserve Corps, but the instruction received in the inspection of foods of animal origin should prove of value to the veterinarian in civil life.

A veterinary officer is assigned to the school of veterinary medicine at each college or university named above. This officer is required to take graduate training in the college or university in addition to performing his instructional duties. This graduate training is in subjects that will not only increase the officer's professional knowledge but enhances his value to the Army Veterinary Service.

Since this article was started official word has been received that the Secretary for National Defense has signed a document authorizing the establishment of a separate Medical Department for the Air Force. It is believed the basic corps comprising the Medical Service of the Air Force will parallel those constituting the Army Medical Department. Support is lent to this statement by the fact each officer in the Army Medical Department has been directed to advise The Adjutant General whether or not he desires transfer to the Air Force.

The number of position slots in each of the several grades which the Army Medical Department shall be directed to transfer to the Air Force from each of the several corps, which in effect will determine how many volunteers will be permitted to transfer, is not known at this time. Therefore, the number of officers which will be authorized in the Veterinary Corps of the Army or for the Veterinary Corps of the Air Force cannot be stated. It can be said, however, that the numbers and grades transferred will be proportionate to over-all military strength and grades of the two departments.

The Veterinary Corps of the Army will continue to be responsible for the inspection of all foods of animal origin at time of procurement—class 3 inspection—including that for the Air Forces, and an estimated 90 per cent of such foods procured for the Navy and Marine Corps. As has been the case in the past, it is expected that veterinary officers with the Air Force will continue to perform the origin inspection of foods in areas of procurement contiguous to their station in order to effect economy in the utilization of personnel and funds and the overlapping or duplication of effort.

## Foot and Mouth Disease in Mexico

By L. F. CONTI, D.V.M.

The presence of Foot and Mouth Disease in any country presents a major problem. In a country like Mexico the problem becomes even more serious because of a number of factors namely: the variable topographical and climatic conditions, difficulty in obtaining enough trained technical help, equipment and materials in the early stages of the outbreak, difficulty of transportation of materials by usual means and the need for better communication system, etc. The language difficulty and the fact that people in parts of Mexico where the disease is present are not as well versed as we are in modern methods of large scale disease control. The government of Mexico is doing an excellent job of carrying on an educational program in their country but all of this can not be accomplished overnight.



The joint Mexican-American Commission has done a big job in overcoming many of the problems listed and they are showing many fine results of their efforts. The disease has been kept within the quarantined area and the combined modified Slaughter and Vaccination program has shown progress.

In Mexico the disease had been confirmed on December 26, 1946 but in the preceding six weeks it had spread from the Vera Cruz area into nine states of that country. In a short time a total of sixteen states were involved. Approximately 211,000 square miles of territory was placed under quarantine. The slaughter program was put into effect and approximately 484,000 head of cattle and 460,000 smaller animals such as sheep, goats and swine were sacrificed in a ten months' period. This was a loss that if continued in the zone of operations where there were some

12 million cattle and 16 million smaller animals might have meant a total of 4½ million animals to sacrifice. The economy of the country could not stand such a loss and a joint agreement was made by the Mexican-American Commission on a modified slaughter and vaccination program whereby all susceptible animals within the zone of operations are to be vaccinated every four months and only infected animals and herds are to be slaughtered. Contact individuals and herds are to receive the vaccination.

Vaccination of all susceptible animals is well under way. The first vaccination has already been completed and many have had their second and even third injections. While the vaccination was originally hoped to produce an effective immunity for a period of six months, field observations place its effectiveness at about four months. This has made it necessary to speed up the vaccine production and the use of it in the field, so that this revised schedule can be met.

The vaccination production in Mexico is something that the Mexican-American Commission can justly be proud of. Starting their own production in February 1948 and thoroughly checking and testing it before release, they were able to put to use their first 30,000 doses in May of that year. Since that time the production has increased steadily until recent figures released show a monthly production of about 3 million doses. While the European vaccine dose consists of some 20 to 30 cc the improved product being made in Mexico has been concentrated into a 1 to 1½ cc dose. This has made its transportation and use in the field a great deal more satisfactory. Reports show that about 2½ million animals are vaccinated every month.

There are about 3000 workers employed on the joint Mexican-American Commission of whom about 105 are American Veterinarians and 126 Mexican Veterinarians. It is a pleasure to see the cooperation and friendship that has developed between the Veterinarians of the two countries and it is certain that a great deal of mutual good will come to both countries through these men having worked together in one of the most advanced control programs ever tackled by two countries.

The presence of the disease some 350 miles below our border will continue to be a threat to our livestock industry and it behooves every Veterinarian to be on the lookout for it. He should keep his clients alerted to report immediately any condition that is suspicious of the disease and he should immediately notify in turn the Bureau of Animal Industry, State or County Live Stock officials in his area.

# A New Approach to the Treatment of Bloat in Ruminants\*

By A. H. QUIN, D.V.M., JAMES A. AUSTIN, B.A., M.Sc., and KARL RATCLIFF, B.S.

Kansas City, Missouri

Primary or secondary bloating of ruminants is an economic problem of major importance in all countries.

During the past quarter of a century, some very fine research reports have appeared in the literature of animal husbandry and veterinary science. Among these should be mentioned the reports of Cole *et al.*<sup>1</sup> in America, Clark and Quinn<sup>2</sup> in South Africa, and Evans and Evans<sup>3</sup> of Britain.

Hand in hand with observations on pathologic states of the forestomachs, we also have had noteworthy contributions on the physiology of ruminant digestion by Dukes of the New York State Veterinary College, Schalk of Ohio State University, Hewitt and Bergman of Iowa State College, and many others.

We must not overlook the scientific contributions of the bacteriologists. Thus, Hastings<sup>4</sup> in a brilliant review has pointed out that the rumen, far from being simply a storage vault, is a virtual metabolic beehive of essential activity. Within the ruminal vault countless species of bacteria and Protozoa enter into the splitting of cellulose, the defractionation of proteins, and the synthesis of vitamins.

**The Treatment of Bloat.**—Treatment procedure for bloat on a symptomatic basis may be classed as (1) palliative and (2) emergency. Palliatives include the age-old gag in the mouth, cold water on the flanks, and peroral administration of antiferments. Emergency treatments include all of the foregoing palliative measures plus tapping, evacuation of the rumen by the Kingman tube, and rumenotomy. All of these corrective treatments possess limitations too well known by all veterinarians to merit more than passing mention. For example, Clark<sup>5</sup> in a recent report warned against the danger of ruining the essential bacterial flora by administration of "disinfectant-type" antiferments such as formalin, copper sulfate, turpentine, and cresylic acid compounds. Passage of the oversize

Kingman tube is an acrobatic accomplishment for all but the most skilled operators, and the prognosis of emergency rumenotomy is always guarded.

**The Causation of Bloat.**—Research has still failed to clarify all the answers to the problem of why some animals bloat and some do not. Clark and Quinn<sup>2</sup> and, more recently, Evans and Evans<sup>3</sup> have cited the relation of contained hydrocyanic acid in legumes as a causative factor in ruminant meteorism. Others have cited that the saponin content of legumes and grasses is of etiologic significance. But, whatever the true cause, the bloated animal is incapable of normal belching and regurgitation.

Autopsies and rumenotomies on cattle suffering from that type of tympanitis commonly known as "frothy bloat" have invariably shown that a froth composed of bubbles is homogeneously mixed throughout the ruminal and reticular food mass. Within the bubbles are such toxic gases as methane, hydrogen sulfide, nitrogen, and carbon dioxide. We postulate that bloating is primarily due to gas entrapment within the froth bubbles because of decreased surface tension. Clark<sup>5</sup> has recently shown by *in vitro* tests that turpentine—probably the best of drugs used in bloat—exerts action by increasing surface tension. This same type of action is typical of kerosene and mineral oil.

To those unacquainted with the physics of surface tensions, a simple example will clarify understanding: Add one of the radio-publicized washing compounds to water and a "mountain" of froth or suds occurs because surface tension has been decreased to the point where particles of air are trapped in a film of detergent. This same phenomenon occurs within the paunch of a bloated ruminant.

**A New Approach to Treatment.**—Samples of a surface tension-increasing agent—a preparation containing a highly polymerized methyl silicone—were submitted to 34 representative veterinarians in different parts of the country for field trial on actual cases of bovine bloating. The product was either injected directly into the dorsal vault of the rumen through a 14-gauge, or larger, hypodermic needle, or diluted with water and given perorally as a drench or by stomach tube.

Of the 155 cases of bovine bloat treated in this manner, 115 made perfect recoveries, many of them in a phenomenally short time. Most of the cases recovered after a single treatment. Some were given collateral medication (purges, stimulants, etc.), or were

\*Field reports cited in this article were based on the use of a preparation trademarked "tympanol," developed by the Jensen-Salsbery Laboratories, Inc.

<sup>1</sup>Cole, H. H., Mead, S. W., and Regan, W. M.: Production and Prevention of Bloat in Cattle on Alfalfa Pasture. *J. Ani. Sci.*, 2, (1943): 285-294.

<sup>2</sup>Clark, R., and Quinn, J. L.: The Role of Prussic Acid in the Aetiology of Acute Bloat. *Onderstepoort J.* 20, (1945): 209-212.

<sup>3</sup>Evans, W. Charles, and Evans, E. T. Rees: Relation of a Clover Juice Factor Causing Paralysis of Smooth Muscle to Bloat in Ruminants. *Nature*, 163, (1949): 373-375.

<sup>4</sup>Hastings, G. E.: The Significance of the Bacteria and the Protozoa of the Rumen of the Bovine. *Bact. Rev.*, 8, (1944): 235-253.

<sup>5</sup>Clark, R.: The Effect of Some Commonly Used Antifermentatives on the *in vitro* Formation of Gas in Ruminal Ingesta and Its Bearing on the Pathogenesis of Bloat. *Onderstepoort J.* 23, (1948): 389-393.



tapped prior to treatment. The recovery rate was approximately 80 per cent when the agent was used in tablet form, crushed and diluted with water, and 95 per cent when an injectable, ready-to-use suspension was employed. Data indicate that the treatment is most effective by intraruminal injection.

The dose of the surface tension-increasing suspension is 100 cc. for adult cattle; 25 cc. for sheep and goats.

While only one actual case report is available, it appears that this method of treatment is equally applicable to cecal tympany of horses and mules.

#### Summary

Primary bloating of ruminants is related to entrapment of gas bubbles within the food mass of the rumen and reticulum because of decreased surface tension. A total of 155 cases of bloat in cattle were treated with a highly polymerized methyl silicone to increase surface tension of the ruminal food mass. This medication was given by intraruminal injection, by drench or by stomach tube. Of the 155 treated cases, 115 made perfect recoveries. Data indicate that the treatment is most effective by intraruminal injection.

### New President-Elect AVMA

Election of Dr. W. M. Coffee, LaCenter, Ky., as president-elect of the American Veterinary Medical Association, was announced at the annual AVMA convention held in Detroit in July.

Dr. Coffee, who is a general practitioner, has been in practice for the past thirty-one years. He is a native of Paducah, Ky., and graduated from Indiana Veterinary College in 1918. He served as president of the Kentucky State Veterinary association in 1930 and was named president of the Southern Veterinary Medical Association in 1948. Dr. Coffee is also a member of the Kentucky State Board of Agriculture and is on the board of the University of Kentucky. For the past nine years he has also been a member of the House of Representatives of the American Veterinary Medical Association and is a member of the organization's public relations committee.

Dr. Coffee operates his own veterinary clinic on his own farm, and has three other veterinarians associated with him in general practice, Doctors Noies, Dean and Forman.

Two new Doctors join the University of California staff at Davis—Dr. D. G. McKerscher from Cornell and Ontario Veterinary Colleges; and, Dr. J. H. Woolsey, Jr., June graduate from Kansas State Veterinary College.

### Report of Delegate, House of Representatives

#### AVMA Convention at Detroit, July 11-14

The house of representatives convened on July 10, 1949, at the Statler Hotel in Detroit, Michigan. The reports of the various committees were accepted, although lengthy discussions were held on the brucellosis program committee's report, relative to the endorsement of four programs to be used in brucellosis eradication. The main complaint was regarding the administration of the programs rather than the programs as outlined.

Suggested amendments to the constitution and bylaws were discussed. These amendments, if adopted, would make it compulsory for junior American Veterinary Medical Association members to join the American Veterinary Medical Association within one year of graduation and require that they join a constituent association within three years after graduation. The three year clause on constituent associations would give graduates time to get located.

The committees on ethics and history are to become standing committees in order that they may function on a more permanent basis. It was suggested that state and local associations amend the section on ethics in the bylaws so as to confirm as nearly as possible to the American Veterinary Medical Association code. By doing this, all organizations could work together on violations.

The president outlined the program for the following year as follows:

1. Better veterinary service to the public.
2. Standardize veterinary education.
3. Promote veterinary research.
4. Increase the work being done on public relations.

A committee, which will represent all branches of veterinary medicine, is planned in order to better balance veterinary service. This committee would study the needs of the various branches of veterinary medicine and make recommendations.

Miami Beach, Florida, has been chosen as the 1950 convention city. Milwaukee, Wisconsin, is making a strong bid for the 1951 convention; however, St. Louis, Missouri; Minneapolis, Minnesota, and Toronto, Canada, have extended invitations.

C. E. WICKTOR, Delegate, State of California.

The Oregon State Veterinary Medical Association will meet at Coos Bay, Oregon, September 9 and 10.

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# NOTES ON ANNUAL CONVENTION—



STEWART MADIN

Department of Veterinary Science, University of California at Berkeley, presented "Personal Observations on Foot and Mouth Disease Research in Europe" at the Large Animal Section of the Annual Meeting, article on page 24.



C. P. ZEPP

President, American Veterinary Medical Association, New York City Practitioner. Dr. Zepp was elected to the presidency at the AVMA Convention this July in Detroit.

## Heard at the Annual Convention

Dr. C. T. Cooper of Visalia is a new papa. Kathy Lee was born June 10, weighing 7 pounds.

Dr. Philip Haims is remodeling a San Diego home into a hospital.

Dr. Warren Dedrick is building a new hospital in El Cajon.

Dr. Darr Jobe is operating the Ozanian small-animal hospital in Bellflower.

Dr. A. R. Inman of Visalia had an intervertebral disc removed but looks to be in fine shape.

Dr. A. M. Eichelberger is off on a six-week trip to the Pacific Northwest, the Detroit meeting and points in Ohio.

Dr. A. J. Sargent of Riverside is a bridegroom.

Dr. Helen Robertson of Hollywood has closed her hospital and goes to England for a few months if she can get passage.

Dr. H. I. Ott, now practicing in Norwalk, is building a hospital there at 11564 Firestone. Should be finished by September 1.

Dr. D. C. Lindley will spend his "vacation" practicing with Drs. Parker & Butcher at Costa Mesa.

Dr. J. V. Nevitt will soon have his North Hollywood hospital completed at 5515 Tujunga Ave.

Dr. W. P. Humphrey has opened a new hospital at Oxnard.

Dr. R. R. Romo is opening in Downey shortly.

Dr. J. F. Cittadin has opened the Abbey Animal Hospital at 1478 Hayes Avenue in Long Beach.

Mrs. Mack Scott, whose husband deserves

a medal for his work on the Santa Monica meeting, especially under the circumstances, is recovering from a subarachnoid hemorrhage. She is in good spirits and looks fine.

Dr. Harry Hurt is planning a new home in Whittier.

The Chas. Reids have a new home in Sherman Oaks.

Dr. J. W. Roberts of Berkeley is modernizing his Haste Street hospital.

Dr. M. K. Dunlap is doing house calls exclusively, in Berkeley.

## CONVENTION NOTES

By A. MACK SCOTT, D.V.M.,  
*President, Southern California  
Veterinary Medical Association*

In the March-April magazine I was supposed to write an article inviting the veterinarians of California to attend the meeting in Santa Monica. It seems that I was pretty busy and I never did get the article written and sent to Mr. Travers. At this time I would like to publicly thank the workers of the local Committee on Arrangements and try to elaborate on a few of their efforts that made this last meeting what it was.

The exhibits were handled by Dr. Paul C. Lockhart. He made the contracts with the exhibitors here in Southern California. The exhibitors that were out of this area were contacted through Mr. Travers' office. This meant many trips to the hotel, showing the space to the exhibitors, and allotting space for each. Eighteen companies contracted for exhibit space and contributed \$1150.00 to help cover convention expenses.

## ON—SANTA MONICA, CALIFORNIA



DR. R. R. BIRCH

Was honored on the occasion of the completion of a 25-year study of brucellosis and for principles which he formulated and put into practice for the control of Bang's disease. Dr. Birch recently reached the age of retirement and his receipt of the Borden Award, following a distinguished career, is most appropriate.

Drs. Rollin R. Smith and Philip Olson handled the registration. The total registration was 271. Dr. Olson and Dr. Smith helped me with the duties of the Membership Committee and there were 34 new applications for membership with accompanying checks.

The publicity was handled by Drs. Eugene C. Jones and Charles H. Reid. The work of this Committee was to publicize the meeting in the papers and over the radio. The Los Angeles area has six major papers, fourteen community papers, and three wire services. It was decided a publicity agent should be hired to coordinate this detail and be responsible for writing and planting these stories. This Committee used the outline and procedure for publicity supplied by the AVMA office. The newspapers also received a picture of each of the speakers. The publicity started one week before the meeting and carried through the meeting. The entire meeting was covered by reporters and photographers from the Los Angeles Times and Los Angeles Examiner. Dr. Harold Snow assisted this Committee by making the daily "plants" of the stories in the Santa Monica area papers. There were more than 100 publicity stories that appeared in the Los Angeles area papers. Three radio broadcasts were made during the three day meeting.

The Banquet Committee headed by Dr. William K. Riddell as Chairman and assisted by Dr. E. C. Baxter saw that two hundred eighty prime-ribs dinners were served, followed by an excellent floor show. Besides the many other duties connected with the con-



O. W. SCHALM

Department of Veterinary Science, University of California at Berkeley, with Robert W. Ormsbee of the same department wrote: "Combined Effects of a Program of Management and Penicillin Treatment, on Occurrence of Staphylococcal Mammary Infections." The paper was presented by Dr. Ormsbee. The article will be found on page 28.

vention, Dr. Baxter took the job as Toastmaster and proved to the satisfaction of all present that he has the humor and ability for such a task.

The Meeting Room Arrangements Committee was a busy, active Committee around the convention. Dr. Russ W. Gerry was in charge and was aided by Drs. Ray Sprowl, J. L. Sullivan and R. W. McIntyre. Dr. Gerry and Dr. Sprowl saw to it that the meeting rooms were set up and equipped with props as required by the speakers. Dr. Sprowl and Dr. Sullivan were responsible for showing the films and slides. Dr. McIntyre from the Los Angeles County Livestock Department furnished the slide projector.

The Santa Monica Chamber of Commerce supplied us with badges, helpers, typewriters and two girls—Miss Fran Pascal and Mrs. Marie Warren, who were very competent and did a splendid job.

Mr. Travers, our Executive Secretary, played a big part in getting this meeting set up properly. He made two trips down here, plus reams of letters advising us and checking to see that certain details were worked out.

There have been others that have helped and who have not been named. With a swell gang like this helping, it is not such a difficult matter to put over a successful meeting. It is a pleasure and honor to have been President of the Southern California Veterinary Medical Association when it was host to our state association. We just hope that we were genial hosts and that all the visitors enjoyed their stay in Santa Monica.

# Historical Review California State Veterinary Medical Assn.

By JOSEPH ARBURUA, D.V.M.

(Continued from last issue)

There were several correspondence schools operating about this time but the most notorious of these was the "Veterinary Science Association of London," of Ontario, Canada. This school and many others preyed upon hundreds of uninformed but well meaning men throughout this country and Canada, who after securing a diploma considered themselves eminently qualified in the science of animal pathology. They presented themselves to the examining boards of the various states and were unable to understand why their credentials were not recognized. They caused the boards an endless amount of discomfort.

The San Francisco disaster of 1906 brought more woe to the State Board and legal veterinary medicine. Dr. C. H. Blemmer was at the time Secretary of the Board as well as the State Association and all records in his possession were destroyed. Therefore no record was left of those possessing a license to practice in this state. Only the memory of the members of the State Board of Examiners could supply such a list. Since memories, however good, are unreliable, it was further necessary to appeal to, and rely on the honesty of the licensees. Fortunately in 1904 the State Association had published a small journal called the "Western Veterinarian." In the second issue of that journal there was printed a complete list of the veterinarians who had been licensed since the time the first examination of the board was held in 1893. The list charted the name in full, the address, year and college from which graduated (except in the case of licentiates) and the year licensed. This now served an important role. At least one copy of this journal is extant and has served to furnish much of the information contained herein.—More of this later.

By 1906 dissatisfaction over the 1903 Act was becoming evident. It was felt that qualifying for a license just by presenting a diploma from a veterinary college was not sufficient to eliminate undesirable timber especially since there were at the time, some colleges whose standards of education did not measure up to those accepted by the profession as a whole.

At the annual meeting in December, the President of the Association appointed a legislative committee composed of Doctors David Fox, R. A. Archibald and Charles Keane with the view of enacting new legislation. Doctor Spencer started a voluntary subscription to defray the expenses of the committee. A total of \$530.00 was subscribed within the profession by the time the legislature convened in 1907, of which all but \$95.00 was collected.

The committee expended \$415.99 and suc-

cessfully steered through the State Legislature, Assembly Bill 814, introduced by Assemblyman F. E. Pierce of Los Angeles. The bill was signed by Governor James N. Gillette March 23, 1907 repealing and replacing the original Veterinary Act of 1893, amended in 1903.

The salient points of this bill were:

Members of the board of examiners had to be residents of the state and actually engaged in the practice of veterinary medicine and surgery for three years.

Members of the board could administer oaths and anyone falsifying before the board was guilty of perjury.

The law required that a person had to be a graduate of a regularly chartered veterinary college requiring at least two sessions of study in veterinary medicine, and surgery of not less than six months and the graduate of two-year colleges must accompany the application for examination with evidence that he had practiced satisfactorily for five years prior to taking the examination.

Applications cost \$10.00.

Balance of funds held by the board at the end of each year had to be turned over to the state school fund.

Examinations were to be held in January, April, July and October.

Reciprocity between states was permitted under certain conditions but had to be approved by the Governor.

An applicant could appeal, in the event of failure to pass an examination within 30 days with a deposit of thirty (\$30.00) dollars.

The Governor then had to appoint three practitioners with the same qualifications as the members of the examining board, as a Board of Review.

If necessary the Board of Review could re-examine the appellant.

If the appellant was passed, each member of the Board of Review was to receive ten (\$10.00) dollars per day from the funds of the Examining Board and the appellant's deposit was to be returned to him, but if the Review Board failed to pass him, he forfeited the thirty (\$30.00) dollars which sum was paid to the Review Board.

Physicians were still permitted to charge fees in the case of emergency.

Those seeking the full text of the act are referred to Chapter 501 - 37th Session of Legislature, Page 919, Statutes and Amendments of the Codes 1907 (California).

Governor Gillette promptly appointed five veterinarians on the Board of Examiners. Those chosen were R. A. Archibald of Oakland, Ward B. Rowland of Pasadena, Edward

J. Creely of San Francisco, David F. Fox of Sacramento and T. W. Orme of San Bernardino. For most of them it was to be a long tenure of office.

#### "The Veterinary Scandal of 1907"

On March 26th, three days after the Governor signed the above bill, the old Board of Examiners was convened in Los Angeles and granted 35 licenses to practice. This was done under the provisions of the old law, whereby those holding a college diploma had only to present them to the board in order to qualify. The board appointed by the Governor under the new act met May 9, 1907 and immediately took steps to nullify the action of the old board by obtaining an opinion from the State Attorney General. He rendered the decision that all licenses issued by the old Board of Examiners after April 23, 1907 were illegal and could not be honored.

The meeting of the State Association held June 2, 1907 resolved itself into one of indignation and censure. The members of the old board were conspicuously absent but they were cited to appear at the next meeting of the Association to show cause why they should not be dropped from the Association. The applicants examined by them at their last meeting in Los Angeles were barred from membership until such time as they qualified for a license under the recently enacted law. The same action was taken by the Southern Auxiliary of the State Association.

The members of the old board appeared at the next meeting which was held in Sacramento September 7, 1907 and presented an explanation for their action.

It appears that the board met in regular session in San Francisco on April 20. This date had been set on adjournment the preceding January. Several licenses were granted and the board adjourned to meet in Los Angeles on the 26th, at which time the 35 licenses were issued. In the meantime a new law had been enacted but the board had assumed their action was legal and maintained innocence of any attempt to circumvent the law.

The explanation was accepted by the association and the gentlemen involved were exonerated of malicious intent. It was however, some time later before the ban on the illegally licensed men was lifted.

#### Registrants at CSVMA Annual Meeting June 20-22, Santa Monica

Wm. G. Aldridge, L. C. White, W. C. Bateman, F. P. Wilcox, M. A. Holmes, Wm. K. Riddell, L. F. Conti, L. A. Browne, W. W. Worcester, G. F. Peterson, Robert J. Foster, Floyd White, A. Mack Scott, Rollin R. Smith, M. L. Dickinson, S. T. Michael, E. V. Edmonds, R. D. Parrish, L. B. Wolcott, Paul C. Lockhart, Oscar J. Kron, Howard Carroll, H. D. Bartlett, Sharpe & Co., B. F. Murray, Joseph Arburua, E. F. Sheffield, W. L. Brown, M. C. Tew, D. E. Barr.

Dave McQueen, N. F. Holmwood, H. C. Burns, Geo. McConnell, Robert W. Olsen, Harold Snow, R. E. Philbrick, A. L. O'Banion, E. C. Baxter, Hill Packing Co. (Wm. Edgar), Victory Packing Co. (J. Burt), Hill

Packing Co. (Ed Rickart), Hill Packing Co. (J. H. Smithers), Hill Packing Co. (Jack Edgar), Victory Packing Co. (James Burt, Jr.), Victory Packing Co. (Bert Lamfromd), N. H. Casselberg, J. E. Menter, John Chudacoff, Roy Gilbert, Ernest Williams, Fred Pulling, R. A. Ball, Kenneth McKay, S. M. Dingwall, Nels Nelson, R. V. Jessup, Philip McClave, Preston Gsell.

W. M. Stansbury, Benton Elson, M. C. Coons, Reginald Stocking, C. E. Brown, A. M. Eichelberger, Dr. Carpenter, Glen Kenaston, R. B. Griffenhagen, Melvin Marcus, V. C. Bunker, Paul Butcher, W. J. Kelbers, S. Hodesson, R. L. Hawes, Wm. Hammond, Ivan Peterson, Joe Wels, Shirley Sjarring, C. R. Richards, Donn E. Bacon, John E. Craigie, Jesse Jones, Elvin Ross, Woodrow W. Eastep, C. S. Litton, T. J. Niemeyer.

R. B. Hovland, C. H. Ozanian, Helen Robertson, R. D. Immenschuh, Jean C. Immenschuh, Warren J. Dedrick, W. E. Maderious, Albert Goodman, Harold Wm. Wood, Joe Ridgway, Marion H. Haring, Carl W. Tague, P. C. Herzer, W. A. Drummond, C. N. Thackeray, E. N. Pearson, Lyle Potter, R. T. Lapham, Joseph Hird, Hazel Chushing, A. R. Anderson, R. C. Bunker, R. D. Macy, Kellogg Dog Food, Myron Thom, J. A. Crump, H. J. Conrad, L. O. Lietzman.

A. E. Hardy, K. C. Hayes, Lorriss J. Regan, Bernard S. Coleman, Steve Richardson, Lawrence Minsky, Wm. Putney, Charles E. Dimon, Carroll Adams, George Williams, Robert Clark, Dr. Cameron, Dr. Carlin, Dr. Marvin Harvey, Ross Hurt, Richard A. Stiern, Robert E. Carroll, E. G. LeDonne, G. N. Miller, W. J. Zontine, James K. Banes, R. L. Scherer, C. O. Little, Mrs. R. L. Scherer, C. T. Lambert, E. L. Buckner, T. F. B. Walker, Jr., Charles D. Stafford.

P. E. Olson, Lyle Potter, Herman E. Necker, Thomas McKnight, Logan M. Julian, Robert Ormsbee, N. G. Brock, Charles H. Reid, H. J. Gilbride, L. A. Stockbauer, B. H. Dean, John P. Winn, E. W. Paul, John E. King, G. W. Glosson, Glas, J. Parshall, A. M. McCapes, John M. Leamy, A. Tobias, Maxwell James, Tom Humphries, Maxine Linnell, A. S. Rosenwald, E. E. Jones, C. E. Wickett, T. J. Hage, T. J. Niemeyer, S. H. Madin, Roy K. Elvin.

P. C. Fledderjohn, B. T. Woodward, Nelson Clemens, Richard A. Shea, Glenn E. Taylor, L. A. Examiner (S. H. Dunn), Mary K. Dunlap, Ann del Valle, James R. Douglas, Frank Parke Wright, Jack Courtney, Brodie Carmichael, R. N. Donnelly, Seymour Roberts, C. C. Oderkirk and wife, Elvin McClurkin, R. W. Gerry, J. H. Coad, D. K. Collins, T. B. Eville, John R. Hoop, J. L. Sullivan, C. E. Brown, Dr. Ben Frees, Dr. Willet C. Mount, Dr. Lauri Luoto, J. W. Harrison, A. C. Tew, D. C. Lindley.

R. K. Balch, R. H. Peterson, R. C. Goulding, R. W. Sprowl, E. J. Bolender, R. Schwarzmann, R. C. Hubbard, Charles S. Travers, C. B. Oulther, C. J. Padfield, B. J. Elander, Kerry Willetts, A. R. Inman, E. M. Dobbs, J. E. Stanton, Mitchell J. Smith, H. I. Ott, A. G. Hall, F. R. Abinanti, W. H. Anderson, C. C. Sundstrom, O. D. Cozens, S. R. Winslow, Gerry B. Schnelle, D. H. McDole, K. R. Wilcox, Harold Groth, John Lewis.

W. G. Kuhn, John Hensley, Hugh Cameron, C. E. Irvin, Dr. Ball, G. K. Cooke, Eugene Jones, Victor Sorgen, Ralph Romo, Boyce McKeen, J. B. Crundwell, Mr. and Mrs. McInnick, Mr. and Mrs. Del Valle, Mr. Edmondson, Dr. J. E. Wilson, Dr. M. C. Levy, Dr. E. R. Quortrup, Frank D. McKenney, W. P. Longmire, Jr., G. L. Dayman, Stanley R. Cooper, Robert Haight, R. H. Walker, Dr. Stouskery, Dr. Groth, Dr. Zontine, Robert L. Stansbury, Geo. E. McClintock.

Darr Jobe, Gilbert S. Jackson, O. W. Schalm, R. M. Barschak, N. Haldy, Samuel Apt, N. L. McBride, H. F. Keagy, J. S. Winson, V. H. Austen, R. J. Stewart, M. L. Boevers, A. P. Humphrey, R. C. Vierheller, J. L. Guerman, O. M. O'Rory, M. H. Clark, Robert B. Michael, J. F. Cittadin, C. McDonald, E. L. Tamm, Dr. Balch, Dr. E. A. Rodier, Dr. D. A. Adler, Dr. W. Steele Livingston, Kenneth Smith, T. G. Beard, H. C. Gissell, W. W. Fechner.

John T. Flynn, N. P. Groves, M. W. Loge, L. J. Lacroix, T. C. Lawson, R. L. Snow, Jack E. Baker, S. Lange, W. Whitaker, L. E. McGee, S. T. Rich, Barbara Snow, D. Smith, F. R. Abernathy, Mr. Edgar, Mr. Rickert, John Woolsey, Edwin Kay, Mrs. R. D. Parrish, Dr. Casel, Marie Warren, D. Smith, Ben Keane, Julius Koch.

Applause for Santa Cruz' telephone directory! The new issue has just come out and one of their most annoying half-page ads has been cut way down and most of the bold print names have been eliminated. Congratulations Santa Cruz!



## Personal Observations on Foot and Mouth Disease Research in Europe

By STEWART H. MADIN, *Department of Veterinary Medicine,  
University of California, Berkeley, California*

All of you are probably well aware of the menace to this country posed by the present epidemic of Foot and Mouth Disease in the Republic of Mexico. In keeping with, and as an adjunct to its activities to protect the livestock industry of this country, the Bureau of Animal Industry sent a number of men to Europe to study research, prophylactic, and control measures related to Foot and Mouth Disease.

In my case, five countries were visited; namely, Denmark, England, Holland, France, and Switzerland. Every effort was made to spend an adequate amount of time in the principal laboratories of each country studying Foot and Mouth Disease. The time allotted was governed by the practical considerations of travel schedules, available accommodations, and applicability of the scientific studies being pursued.

The first laboratories visited were those in Denmark. In this country there are two separate installations: (1) The state Veterinary Research Station for Virus Diseases on the Island of Lindholm, under the direction of Dr. E. Fogedby, and (2) The State Serum Institute in Copenhagen under the direction of Dr. S. Schmidt. The Research Station on Lindholm has as its activities the production of virus for the manufacture of vaccine and the majority of the actual research carried out on Foot and Mouth Disease in Denmark. The laboratories in Copenhagen, on the other hand, actually make and test the vaccine and do limited research, principally on various technical aspects of the vaccine itself.

The island of Lindholm is situated approximately four miles from shore, the closest port being the small rail terminus of Kalvehave on the main island of Zealand. Access to the island is by ferry or small boat, the former operating three times a day, and the latter at the will of the director of the institute.

The island, itself, is approximately half a mile in diameter and contains the laboratories, slaughter house, rendering works, and living quarters for certain members of the staff, laborers, and visiting personnel.

The principal vaccine in use throughout western Europe today is the so-called "Schmidt Waldmann" vaccine, which is an aluminum hydroxide, formalin inactivated product. It is manufactured in Denmark, Holland, Switzerland, and is soon to be produced in France, as well. In general, the production methods used in each country vary only slightly, and a general description for its manufacture in one country will be illustrative for all.

The method of virus production and harvest for the vaccine is rather interesting and is essentially as follows. Approximately fifty head of cattle are each inoculated with two cc. of virus material into the tongue. Following an incubation period of seventeen hours, all the cattle are examined, and those having well-formed vesicles are then slaughtered. Hourly examinations are continued on those not initially showing sufficient vesicle formation until about twenty-four hours incubation, after which time any still not satisfactory are rejected. Following slaughter, the entire tongue is removed and washed. A skilled operator then carefully removes or "harvests" the vesicle fluid and the infected tongue epithelium. A single cow will usually yield between forty and fifty grams of combined epithelium and vesicle fluid. This material is kept frozen in large stainless steel cans until sufficient quantity to make a "batch" of vaccine has been obtained. The material is then shipped to Copenhagen where the actual vaccine is made in the laboratories of the State Serum Institute.

In the manufacture of the vaccine, four essential processes are involved: Grinding and homogenization of the vaccine material, centrifugation and filtration, absorption and inactivation, and finally, bottling and subsequent potency testing.

The tongue epithelium harvested at Lindholm is first pressed in a glycerine driven press to remove all fluid, then ground in a fine mincer, and finally homogenized by means of a homogenizer similar to those used commercially in dairies.

The vesicle fluid recovered both at Lindholm and from the pressed epithelium is added to the homogenized epithelium, along with a pre-determined amount of iced distilled water. This mixture is then passed through a series of high-speed continuous Sharples Centrifuges, followed by filtration via a series of Seitz E K filters. The resulting product is a pink colored solution free of all particles. This is then pumped into large automatic stirring chambers. At this point, the aluminum hydroxide and the formalin are added, the mixture heated to twenty-five degrees Centigrade for twenty-four to seventy-two hours (depending on the country), and then bottled.

Testing is done by inoculating a series of animals with the vaccine and allowing two to three weeks for immunity to develop. They are then challenged with live virus, the inoculations normally being made into the tongue epithelium. To successfully pass, the



vaccine must protect all of the animals against so-called "secondaries"; that is, those lesions usually developing on the feet five to fourteen days after inoculation. Animals are, however, allowed to develop "primaries"; that is, vesicles at the point of inoculation.

The immunity so conferred by this vaccine usually lasts several months and where not used as a means of merely carrying cattle for a short period of time, reinoculation should be practiced about twice a year.

Among the research problems being undertaken at Lindholm were methods of diagnosis and typing. This work was under the supervision of Dr. Michealson, the assistant director at Lindholm. At present, both complement fixation and hemagglutination studies are being carried out. Their results with these are to be made public in the near future.

The next laboratories visited were those in Holland under the direction of Dr. H. S. Frankel. As in Denmark, there were two locations: (1) The vaccine virus-producing unit in Rotterdam, (2) The Research laboratories at the State Institute for Veterinary Research in Amsterdam. The laboratories in Holland were very modern and well equipped. A great deal of research is being done there, not only in quantity, but variety as well. Perhaps the most interesting part of the research in progress is the tissue culture studies being conducted by Dr. Frenkel. As all of you probably realize, one of the great stumbling blocks to research in the field of the filterable viruses is the inability at present to propagate them in the absence of living tissue. This is particularly vexatious in Foot and Mouth Disease research when one considers that the definitive important host is the large, expensive, and unwieldy Bovine. Any method which would permit the propagation of the virus under controlled laboratory conditions, rather than animal passage, represents a major advance in Foot and Mouth Disease research techniques. Dr. Frankel has succeeded in cultivating the virus of Foot and Mouth Disease in the epithelium of the bovine tongue. This tissue, when suspended in a suitable nutrient medium, permits the actual propagation of the virus and causes pathological changes in tissue culture explants strikingly similar to those seen in comparable tissues naturally invaded by the virus.

This new technique permits, for example, the obtaining of large quantities of the virus for a variety of physical and chemical studies. It may also have an important bearing on the future manufacture of vaccines, and holds great promise for accurate, rapid methods of diagnosis.

Among the many other activities carried on in this laboratory are the manufacture of the Schmidt Waldmann Vaccine, complement fixation studies, and a variety of physico-chemical studies on the virus per se.

In England, I visited the Research Institute of the Foot and Mouth Disease Research Committee, located at Pirbright in the pleasant countryside of Surrey, about thirty-five miles from the heart of London. This laboratory is under the general direction of Dr. Ian Gallo-way, and for the most part comprises a series of buildings which have been adapted over a period of years for Foot and Mouth Disease research. In connection with the research activities there, I should like to mention two problems in particular.

The first is a different type of vaccine, the so-called attenuated blood vaccine; the second, the excellent complement fixation studies being carried on there.

The attenuated blood vaccine is made very similarly to our own "crystal violet blood vaccine" for hog cholera. The procedure essentially consists of exsanguinating cattle during the height of the disease, defibrinating the blood, and then adding crystal violet to this blood in the proper proportions. The resulting mixture is then allowed to incubate for eight days at thirty-seven degrees Centigrade, after which it may be tested and subsequently used. Some of the early experimental work indicates that this type of vaccine may be a useful adjunct in emergencies to our present-day methods of controlling this disease.

As the majority of you are probably well aware, the epidemic now present in Mexico was initially typed as an "A" by the British. Subsequent work on their part, using the complement fixation method, first indicated the Mexican strains to be "A" type variants and that there were actual differences between types of the variants. For example, two of the major Mexican strains, M-1 and MP, although both "A" type variants were shown to be similar but not identical viruses by the British complement fixation studies. This test is performed in essentially the manner of the Wassermann Complement Fixation, and is, indeed, exceedingly well done in the hands of the British workers.

A short visit was paid to the laboratories on the outskirts of Paris. Investigational work on Foot and Mouth Disease in France is rather limited at the present time. A new vaccine-producing laboratory is soon to be dedicated at Lyon, however, and it is to be hoped that this will stimulate further research in the country where so much of the early work was pioneered.

The last country visited was Switzerland. The Swiss, at the moment, are doing very little in the way of actual research, preferring to concentrate their efforts on the production of vaccine. The Swiss also make the Schmidt Waldmann Vaccine in quantity and have perhaps the most modern facilities in all Europe for this purpose. The laboratories are located in Basel, and are under the direction of Dr. Moosebrugger.

## PRACTICAL HUMANE WORK

By DR. W. A. YOUNG, *Managing Director, The Anti-Cruelty Society, Chicago, Ill.*

*(Continued from last issue)*

I have maintained for years that so long as research people and the anti-vivisectionists stand with their backs to each other and call each other nasty names, there will be no progress made toward solution of the controversy. Time marches on while the animals which are poorly cared for in some laboratories are still suffering unnecessarily. It seems reasonable to me that sound and sensible people from both sides of the argument could sit down around a conference table, get acquainted with the other side of the question and study the problem. Then, I believe, they could do some very definite things to lessen the sum total of animal suffering and probably human suffering too.

### Other Activities of the Anti-Cruelty Society

One of our major activities (not the greatest, however) is the maintenance of an outpatient clinic. I am very definitely convinced that a charitable clinic for animals is a beneficial thing when properly conducted. I even think that a philanthropically maintained animal hospital could be a good thing. However, I believe that we must not encourage commercialism in our philanthropic clinics or hospitals. I would like to see a very fine, completely equipped and properly manned central animal hospital in a metropolitan area, where licensed veterinarians would be able to bring, treat, operate upon and hospitalize patients in a manner which would enable them to receive adequate fees. Such a hospital, to my knowledge, does not yet exist.

Our own clinic functions strictly as an outpatient one. It is in no wise a hospital. We try ever so definitely to keep out clientele able to afford private veterinary service—a few do get in. The basic points for admission to our clinic are: (1) Charity cases; (2) emergency cases; (3) consultation. Consultation, not because we think we are so expert, but because we are fortunate in being provided with some very fine equipment—X-ray, etc., the donors of which intended to be used for the relief of suffering animals. We make this equipment available to all licensed veterinarians on a cost basis. I am happy to say that there is a fair trickle of patients benefiting from it.

### Humane Education

I would enjoy talking to you for half a day about this field of our activity. At the same time I am almost afraid to speak of it, for it is about the most perfect thing we do. Our humane education work might well be defined as givings boys and girls practical, factual, useful, interesting and helpful information about beasts, birds and animals and their care. Most of this work is done in the elementary

schools, some in high schools and occasionally we have an adult group. It is predicated on the feeling that if we can create a bona fide interest in the hearts and minds of our boys and girls, we need not be concerned about their being cruel. I could recite hundreds of instances in the past few years proving that this program is effective and sound.

We employ a college trained teacher as Supervisor of our Humane Educational Program. This program is given to the schools, public, private and parochial, without any charge to the school system.

### Literature

Each year a few hundred thousand pieces of literature pass from our storage shelves into the hands of men, women and children. Such things as: The Care of the Dog, Cats and Their Care, A Commonsense View of Rabies, Fleas and Their Control, and various other things, including a quarterly report, annual Year Book, animal bookmarks and special bulletins constantly and continuously serve to remind John Public that animals deserve fair consideration. One thing that is emphasized over and over again is that sick and injured animals need veterinary attention. I do not know how many thousands of dollars' worth of advertising has been given the veterinary profession through this literature, but if it could be completely and correctly measured, I am sure it would be a staggering sum. We want it that way. Good veterinary care reduces animal suffering.

### Live Stock Loss Prevention

The National Live Stock Loss Prevention Board, of which I am the current Chairman, is made up of nearly a half hundred business and professional executives. I think they are all big wheels except me. They are executives from packing houses, railroad companies, stock yards, American Meat Institute, live stock producers' associations, etc. Yes, and a representative of the A.V.M.A. and the American Humane Association. As I told you before, the approach is a commercial one, working with special agents and regional managers directly from the general office in the Union Stock Yards of Chicago.

This Board spreads practical information to all phases of the live stock industry, pointing out ways and means of readily reducing broken backs, broken legs, smothering and scores of other things which happen to animals on the way to the market. These live stock losses do two things. They cause a monetary loss which hits your pocketbook as a consumer and it hits the producer's pocketbook. It causes pain and suffering to animals.

When we get a trucker to use a partition between calves and steers, swine and cattle, there is less meat lost on the way to market and we in anti-cruelty work have gained a reduction in the sum total of animal suffering. I suggest that you get a copy of the annual report of this Board and study it carefully. We do not want to inject a lot of humane, humane, humane in this Loss Board's activities for the humane treatment of animals comes in the reduction of injuries, deaths, cripples, etc. The emphasis and approach is a practical one—more profits in the live stock industry due to less damage in transit.

Floods, forest fires, drouths, etc., seem to be with us some place most of the time. It is my privilege to serve as the Regional Director of the American Red Star Animal Relief for the ten north central States. The A.R.S.A.R. is to animals what the American Red Cross is to humans. Whenever there is an emergency or catastrophe the Red Star goes to work, the primary thought being the rescue, succor, shelter, comfort and rehabilitation of the unfortunate animals concerned. Yes, the Red Star is interested in humans, too, but we realize the Red Cross and other organizations are in the field for that specific purpose, and our specific job is the rescue of the animal. We are nationally recognized and there is something occurring in this line almost constantly.

You might be interested to know that each Saturday morning I devote from 2 to 2½ hours to instruction of Scouts, Campfire groups, school youngsters, and playground groups. This consists of a course of about ten hours from which youngsters learn about animals, how to handle animals, basic first aid to animals and other practical things. Upon completion of this course, they receive a diploma from the A.R.S.A.R. This is done without fees or charges to the boys and girls or their organization.

You no doubt are wondering how all these activities are paid for. That is a fair question.

In a vast majority of instances, and specifically in my own society, we function entirely outside of the tax dollar. We are a State Corporation, Not for Profit, and so recognized by the Federal Income Tax Division. We also function outside of the Community Chest. Thus we are a private charitable corporation entirely on our own. Our money comes partly from the nickels, dimes and dollars which people give us as donations as contact is made with them, or more or less spontaneously because they like our work. Bequest money is ordinarily held as an investment and the income used for operating expenses. The public approves of our work, evidently, for the society has been growing steadily for fifty years and today is a leader in humane work. Such a position is not gained without public approval.

The officers and directors of our society not only contribute their time but they also pay

membership dues and give contributions of money. They are true humanitarians. Thus, I think I can say to you that the work of a humane society with a practical program is a definite part of our American way of life.

I often say Kindness Brings Happiness. A famous writer once said that "Happiness is a perfume you cannot pour upon others without getting a few drops on yourself." I think my basic motto is to try to enhance the good in the world and smother the bad.

I am very proud to have played a part for a quarter of a century in the practical activities of some of our outstanding and successful anti-cruelty societies. I feel it a privilege to be identified with these organizations and an honor, not alone to me personally, but to my profession—the veterinary profession—to be the active head of one of the largest animal protective societies in the United States. I would be even more proud if more of my veterinary colleagues would and could fill similar places in this part of our American way of life.

### New Applications

H. C. Field, Arcadia—Vouchers: R. L. Griffith and Samuel Hodesson.

Carroll E. Adams, Hollywood—Vouchers: Rollin R. Smith and Philip Olson.

J. F. Cittadin, Long Beach—Vouchers: A. Mack Scott and Charles H. Reid.

Robert E. Clark, Bakersfield—Vouchers: Rollin R. Smith and Philip Olson.

G. L. Dayman, Bakersfield—Vouchers: G. N. Miller and W. C. Bateman.

Charles E. Dimon, Los Angeles—Vouchers: Rollin R. Smith and A. Mack Scott.

Woodrow W. Eastep, Redwood City—Vouchers: E. C. Baxter and E. G. LeDonne.

Newell P. Groves, Los Angeles—Vouchers: A. Mack Scott and G. N. Miller.

A. E. Hardy, Huntington Park—Vouchers: A. Mack Scott and C. E. Wictor.

Darr Jobe, Bellflower—Vouchers: Glen H. Kenaston and A. Mack Scott.

Edwin W. Kay Jr., San Jose—Vouchers: Carl W. Tague and Joe J. Ridgway.

Robert Lawson, Mountain View—Vouchers: Dean C. Lindley and Roscoe R. Balch.

L. O. Lietzman, Whittier—Vouchers: C. E. Wictor and A. Mack Scott.

L. E. McGee, Arcadia—Vouchers: Fred B. Pulling and Robert J. Foster.

Shirley M. Sjarring, Redlands—Vouchers: W. W. Worcester and A. Mack Scott.

Barbara Shirley Snow, Canoga Park—Vouchers: A. Mack Scott and Joseph Arburua. Joachim Weis, Palo Alto—Vouchers: O. W. Schalm and Robert Ormsbee.

George A. Williams, Compton—Vouchers: Philip Olson and Rollin R. Smith.

John H. Woolsey, Woodland—Vouchers: Carl W. Tague and Joe J. Ridgway.

Bernard Koch, Santa Cruz—Vouchers: Joseph M. Arburua and Milton C. Levy.

# A Search for Fundamentals About Staphylococcic Mastitis

By O. W. SCHALM and R. W. ORMSBEE, *Department of Veterinary Science,  
University of California, Berkeley, California*

In 1945 we had reached the point of having essentially eradicated *Streptococcus agalactiae* from a dairy herd composed of about 225 mature cows. Since the project had reached the initial goal, it became necessary at that time to decide whether or not to discontinue further investigations in the herd or to adopt a new goal. Our bacteriologic studies had shown that staphylococcic mammary infections were prevalent in the herd although serious clinical mastitis had not been prominently associated with such infections. The herdsman expressed willingness to segregate the herd on the basis of findings relative to mammary infection with *Staphylococcus pyogenes*. This appeared to be a singular opportunity to study staphylococcic mammary infections uncomplicated by concurrent infection with *Str. agalactiae*.

The investigation was designed to answer two questions: (1) "Can infection of clean animals be prevented?" and (2) "Can infected animals be cured?" Milk samples were drawn from selected segments of the herd each week and an attempt was made to sample every cow in the herd at least once in every six weeks. Fresh cows were sampled before being added to the milking herd and each cow was usually sampled several times during its dry periods. Strict segregation of clean and infected cows was maintained both at milking time and in corrals and pastures.

The data presented in this discussion were accumulated during four years of control efforts. Initially, about 52 per cent of the herd was infected with *Staph. pyogenes* and the lowest rate of infection, 26 per cent, was found among first lactation animals. After four years of control, the incidence of infection in the herd as a whole was 20 per cent and in first lactation animals it was 3.1 per cent. Concurrently, although the proportion of heifers in the herd had increased, the number of old cows remaining in the herd also increased and as a result the average lactation age of the herd changed from about 2.95 to 3.38. The latter may have played a part in effecting an observed increase in production of about 50 pounds of fat per cow.

This limited success in control of staphylococcic mammary infection was primarily of interest because it provided opportunity to search for fundamentals of epidemiology and pathogenesis of the disease. Most lasting benefits in the control of diseases stems from knowledge of fundamentals. What then, are the reasons for this reduction in incidence of infection and what facts may be derived from analyzing the data? Four influences might singly or in combination effect a re-

duction in incidence of infection, namely, culling, therapy, introduction of replacements, and the prevention of spread.

While evidence indicated that the rate of occurrence of new infections prior to the program was over 26 per cent among clean cows, the rate of spread during the program was between 13 and 15 per cent, and was about the same in all age groups. These results were largely the benefits of protection from exposure through sanitary practices and segregation, and demonstrate that the question, "Can clean animals be protected from infection?" can be answered, with reservations, in the affirmative. The data convinced us that the principal mode of transmission was through the milking act. Furthermore, our success in preventing unlimited spread suggests that the staphylococci associated with bovine mastitis may be specific mammary strains, rather than ubiquitous strains. Were the organisms ubiquitous, then one could hardly expect to reduce the incidence of infection in first lactation animals to the low level that we observed.

It seems to be commonly believed that treatment of staphylococcic mammary infections with penicillin is of questionable worth. Analysis of our data on use of penicillin revealed that in lactating quarters cures were low and ranged from 20 to 30 per cent, whereas in dry quarters the cures ranged from 50 to 80 per cent, depending upon the pattern of penicillin administration employed. The idea that penicillin is of little value in treatment of staphylococcic mastitis no doubt arose as a result of the poor response to treatment in lactating quarters.

When we investigated the progress with treatment in various age groups, we found that response was highest in animals which had been treated following completion of their second lactation (early infections), and was moderately good in all age groups except the sixth lactation and over, where only one out of twenty infected animals was cured (long standing infections). It was shown that failure of cure among the old cows was not related to penicillin resistance of the strains of staphylococcic involved. A number of facts point to tissue invasion as a probable explanation for failures to cure.

In general, results from single infusions of penicillin were unsatisfactory both in lactating and dry cows. Optimum results were obtained in dry quarters from a total of 200,000 units divided into two equal infusions and given 48 hours apart or into 4 equal infusions administered 24 hours apart. About 70 per cent cures can be expected from such a pat-



tern of treatment. A total of 400,000 units did not improve the percentage of cures over that obtained with 200,000 units. Thus the question, "Can infected animals be cured?" may be answered, "Yes, especially if treated with more than one infusion while dry, and provided that the case is treated before extensive invasion of tissue has occurred."

In certain instances, although treatment on a quarter basis may appear excellent, when considered on a cow basis results can be disappointing. If, on a quarter basis 70 per cent response can be anticipated, then the cow treated for a single quarter infection while dry has seven chances in ten of being cured. However, let us consider a cow infected in two, three, or even four quarters. Response will be .7x.7 (49%), .7x.7x.7 (34%) or .7x.7x.7x.7 (24%), respectively. Thus, even with reasonable response from treatment, the animal infected in several or all quarters may not be completely freed of infection.

Someone is going to ask if this method of control is practical. Possible benefits depend upon how costly this infection is in a particular herd. Only 14 per cent of the samples we collected and classified as positive were associated either with an abnormal number of leucocytes or with a visibly abnormal quarter, or milk. Also, if damage due to staphylococcal infection is serious, then dairymen in their culling program must unconsciously dispose of infected animals. Much to our surprise, we found that on the average, 24.7 per cent of infected animals had been culled during the program, whereas 20.7 per cent of clean animals had been culled, a differential of only 4 per cent. Occasionally, acute flare-ups occurred and one case of gangrenous mastitis was encountered. While acute mastitis was not a serious problem among the infected cows in this herd, such is not the case in every herd. For this reason, the control of staphylococcal mammary infections may be highly desirable in certain herds. In two herds, where one of us (RWO) makes weekly visits, acute mastitis at calving time due to staphylococcal has been practically eliminated by the treatment of infected cows when dry. It would seem that even with quarters that fail to cure, the effect of treatment in reducing the number of organisms in the gland aids in preventing flare-ups upon freshening.

On the basis of observations made thus far, we suggest the following steps for control of staphylococcal mammary infection:

1. Milk the heifers, which are usually clean when introduced into the herd, first, or if a testing program is in progress milk clean animals first.

2. Prevent carry-over of infection from one milking to the next by cleaning and sterilizing milking machines between milkings.

3. Employ treatment with penicillin during lactation only on clinical cases. Symptoms

can often be controlled but the infection usually persists.

4. Treat all infected quarters when dry, using 100,000 units per quarter per infusion, and repeat the treatment in 48 hours.

5. Focus attention on protecting clean cows from exposure, and on early treatment of infections before invasion of tissue has proceeded too far.

Admittedly these recommendations are inadequate for complete control of staphylococcal mastitis. They are the best that can be offered with current knowledge. Indications are that more critical methods of study are going to be required for further progress and that they should be directed at:

1. Development of critical methods for the classification of strains of staphylococci.

2. Biochemical aspects of pathogenesis, through separation of toxins, etc.

3. Further information on epidemiology.

4. The nature of resistance to staphylococcal infections.

#### **New York SVMS Meeting**

The 58th annual meeting of the New York State Veterinary Medical Society was held at the Hotel Statler, New York, June 22-25, 1949. There were some 600 registrants. In his presidential address, Dr. L. W. Goodman stated that the association has a paid-up membership of 700. Dr. Lyle S. Compton, Clymer, N. Y., was elected president; Dr. A. L. Brown, of Adams, N. Y., vice-president, Dr. W. J. Sellman, Utica, N. Y., and Dr. J. J. Regan, of Utica, was reelected executive secretary.

#### **International Veterinary Congress Award**

To Holland-born Dr. Gerard Dikmans, of Beltsville, Md., was given the highest award of the AVMA. Dr. Dikmans received the 12th International Veterinary Congress prize for his work in parasitology and the role of parasites in causing disease losses in livestock.

#### **Officers, American Veterinary Medical Association 1949-1950**

*President*—DR. C. P. ZEPP, New York City.

*President Elect*—DR. W. M. COFFEE, La Center, Ky.

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*Chairman Executive Board*—DR. W. G. BROCK, Dallas, Texas.



## In Memoriam

### RALPH C. BUNKER

Dr. Ralph C. Bunker, staunch supporter of the California State Veterinary Medical Association, American Veterinary Medical Association, and Southern California Veterinary Medical Association, passed away at his home, the evening of July 11, 1949. Dr. Bunker had been an active small animal Doctor in Los Angeles for the past 23 years. He was a native of Bunkerville, Nevada (a town named after his family) and a graduate of Ohio State University. He was a past president of the Southern California Veterinary Medical Association.

Dr. Bunker is survived by his widow, Gael, two daughters, Mrs. Laree Bennett, and Mrs. Lois Curtis of Los Angeles, a son Dr. Von Bunker of San Pasquale and two sisters, Mrs. Lillian Corry and Mrs. Paul Miner of Utah.

### ERNEST RAY SPARKS

Dr. Ernest Ray Sparks was born in Vancouver, Washington, April 4, 1885. Inspired by his intense love for horses he enrolled in the Kansas City Veterinary College at Kansas City, Missouri and was graduated with the class of 1909. He practiced in Portland, Oregon for some time, then came to California where he operated one of the first Dog and Cat hospitals in Los Angeles, simultaneously carrying on an extensive large animal practice.

In the early 1930's Dr. Sparks built a new and modern Dog and Cat hospital on East Holt Avenue, Pomona, moving into it in 1933. Forced into semi-retirement by ill health in September, 1948, he leased his hospital on January 1, 1949, but still continued some of the lighter large animal work from his home in the Chino district. He is survived by his widow, Mrs. Dorothea T. Sparks of Chino, and one son by a former marriage, Ernest W. Sparks of Tangent, Oregon.

### ROBERT A. CALDWELL

Dr. Robert Alonzo Caldwell of Colusa, California, passed away August 2nd. His passing was due to a carcinoma of the lungs.

Dr. Caldwell was widely and favorably known throughout the state and was very active in association matters, serving as vice-president (1931-32) and president (1932-33) of the CSVMA. He was a member of the AVMA.

He is survived by his widow, Mrs. Clara Caldwell, three sons, Robert, Richard G., and John Howard, and a brother, Dr. John W. Caldwell (veterinarian), of Riverside, California.

### Californians at Detroit Convention

N. Jerome, Santiago; I. M. Roberts, Oakland; Dr. and Mrs. F. W. Koebel, Gustine; Dr. and Mrs. N. L. McBride, Pasadena; J. M. Arburua, San Francisco; N. H. Casselberry, Berkeley; Dr. and Mrs. A. M. Eichelberger, Riverside; A. G. Feers, Los Angeles; Dr. and Mrs. T. J. Hage, Davis; Dr. W. F. Hughes, Davis; L. M. Hurt, Los Angeles; Eugene Hyland, Los Angeles.

Dr. and Mrs. J. A. Jones, and Allen, Los Angeles; Mrs. H. W. C. Lichtenwalter, Sacramento; Maj. Russel M. Madison, Hamilton Field; S. T. Michael, San Francisco; Dr. and Mrs. M. A. Northrup, and Janeth and Ben, San Francisco; Dr. and Mrs. Rufus Norton, Riverbank; Mrs. H. I. Ott, Los Angeles; C. J. Padfield, La Mesa; Guy A. Railsback, Berkeley; Mrs. C. H. Reid, Hollywood; W. V. Rockwell, Huntington Park; Dr. and Mrs. F. H. Saunders, Stockton; Dr. and Mrs. Schalm, Berkeley; Joanne Schultz, Whittier; R. Sisco, Tulare; R. P. Swartz, Vallejo; Dr. and Mrs. C. E. Wicktor, Los Angeles; Neil O. Wilson, Los Angeles.

### Rebate Ban on Doctors Is Signed

A doctor will soon be breaking a State law if he refers a patient to a druggist, for example, who gives the doctor a rebate for the service.

The new statute was signed recently by Governor Warren, having been introduced in the recently adjourned Legislature by Senator Hugh M. Burns, Fresno.

Violation of the law will bring a misdemeanor charge—plus the possibility of loss of license.

It applies to all persons registered under the healing arts, including laboratory technicians, dentists, physicians, drugless practitioners, dispensing opticians, optometrists, osteopaths, pharmacists and veterinarians.

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All inquiries should be addressed to Mr. Charles S. Travers, Executive Secretary, California State Veterinary Medical Association, 3004 16th Street, San Francisco, or direct to the

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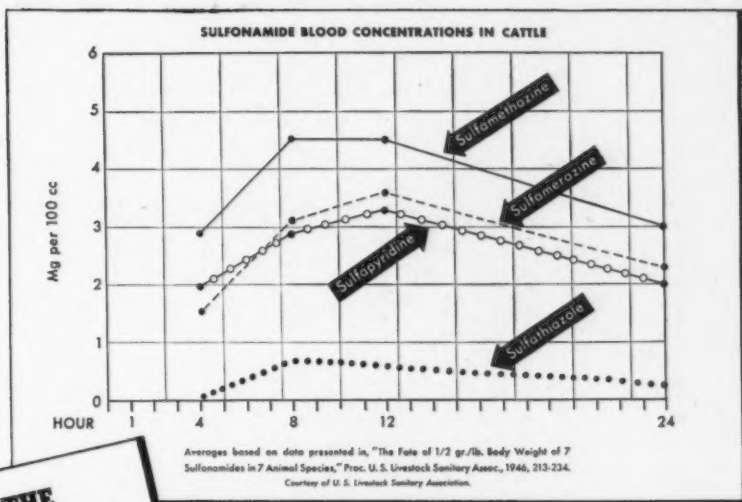
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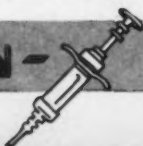
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